

U.S. Application No.: 09/831,798
AMENDMENT B

Attorney Docket: 3926.027

IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-26 (canceled).

27. (previously presented) A process for improving performance of a system for recognizing traffic signs, said system including a camera and a therewith associated evaluation unit for image recognition or image display, said process comprising:
- utilizing information originating from at least one of
- (a) a map-based navigation system and
 - (b) a traffic information system
- in the evaluation or display of contents of traffic signs, wherein the system for traffic sign recognition is capable of operating at a normal performance level and at least one enhanced performance level, and wherein said system is caused to operate at said enhanced performance level when it is determined on the basis of map-based information or traffic information that the vehicle is passing through an area in which recognition of traffic signs may be problematic,

wherein within said problematic areas supplemental subdivided recognition processes are carried out, comprising:

- a) when entering or leaving communities, carrying out a specific search for signs indicating entry of a community and leaving of a community,
- b) when in the area of traffic influencing facilities, changing signs or traffic lights, searching for any change in the type and manner of the representation of the traffic signs,
- c) when in an area in which poor visibility due to fog or rain may be present and a higher probability of contrast-poor images may be required, effecting an increase in the contrast enhancement of the image data.

Claims 28-34 (canceled).

35. (currently amended) A process ~~according to Claim 24~~ for improving performance of a system for recognizing traffic signs, said system including a camera and a therewith associated evaluation unit for image recognition or image display, said process comprising:
utilizing information originating from at least one of
(a) a map-based navigation system and
(b) a traffic information system
in the evaluation or display of contents of traffic signs,

wherein the system for recognition of traffic signs, during the processing of image data provided by an image sensor[[,]] :

examines these image data for the presence of traffic signs,

extracts data corresponding to traffic signs,

separates the extracted data into upper and lower classes and in association therewith extracts class-specific characterizing data, and

supplies these extracted class-specific characterizing data to a separate classification.

36. (previously presented) A process according to Claim 35, wherein the classification occurs hierarchically, in multiple classification steps.

37. (previously presented) A process according to Claim 35, wherein the classification steps are essentially set up follows:

a) first, only the characterizing data associated with the upper class of the object is supplied to a classifier,

aa) upon successful classification, wherein the class is recognized correctly with a high degree of confidence, the characterizing data are replaced by the appropriate symbolic representation of the upper class stored in the memory unit,

ab) upon unsuccessful classification, wherein the class could not be correctly recognized with a high degree of confidence, the characterizing data for the upper class and the charactering data for the lower class are replaced by the corresponding original image data originating from the image sensor,

b) if the classification of the upper class was successful, then subsequently the characterizing data associated with the lower class of the object are supplied to a classifier,

ba) upon successful classification, wherein the class is recognized with a high degree of confidence, the characterizing data are replaced by the appropriate symbolic representation of the lower class stored in the memory unit,

bb) upon unsuccessful classification, wherein the class could not be correctly recognized with a high degree of confidence) the characterizing data for the lower class are substituted by the original image data from the image sensor.

Claims 38 - 46 (canceled).

47. (currently amended) A vehicle-mounted device for enhancing the performance of a system for recognizing traffic signs, which system includes a camera and a therewith associated evaluation unit for image recognition or for image display,

wherein said system is associated with at least one of (a) a map-based navigation system and (b) a traffic information system so as to utilize information originating therefrom in the process of recognition or display of contents of traffic signs ~~device according to Claim 38,~~

wherein a processing unit is provided in the system for recognition of traffic signs, which processing unit includes a program according to which it examines image data supplied by an image sensor for the presence of traffic signs, then extracts these data, separates these into upper and lower classes and in this context extracts class specific characterizing data and separately supplies these to a classifier.

48. (previously presented) A device according to Claim 47, wherein this classifier is constructed hierarchically, in multiple classification steps.
49. (previously presented) A device according to Claim 48, wherein the classification steps are so constructed, that the classifier accomplishes the following functionalities:
- a) first, only the characterizing data associated with the upper class of the object is supplied to a classifier,
 - aa) upon successful classification, wherein the class is recognized correctly with a high degree of confidence, the characterizing data are replaced by the appropriate

symbolic representation of the upper class stored in the memory unit,

ab) upon unsuccessful classification, wherein the class could not be correctly recognized with a high degree of confidence, the characterizing data for the upper class and the charactering data for the lower class are replaced by the corresponding original image data originating from the image sensor,

b) if the classification of the upper class was successful, then subsequently the characterizing data associated with the lower class of the object are supplied to a classifier,

ba) upon successful classification, wherein the class is recognized with a high degree of confidence, the characterizing data are replaced by the appropriate symbolic representation of the lower class stored in the memory unit,

bb) upon unsuccessful classification, wherein the class could not be correctly recognized with a high degree of confidence) the characterizing data for the lower class are substituted by the original image data from the image sensor.